

Application/Control Number: 09/701,195

Page 2

Art Unit: 2800

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Cancelled claims 1-41

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42.(Previously presented) A system for generating, maintaining, and retrieving characterizing information about gemstones comprising:

a first illumination source disposed for illuminating a gemstone from a first aspect thereof;

a second illumination source disposed for illuminating the gemstone from a second aspect thereof;

electronic camera means for viewing the gemstone and for generating a first electronic signal corresponding to a first physical characteristic of the gemstone when illuminated by said first illuminating source and for generating a second electronic signal corresponding to a second physical characteristic of the gemstone when illuminated by said second illuminating source;

electronic data processor means operatively connected to said electronic camera for receiving the electronic signals, for controlling the operation of said electronic camera to generate electronic signals corresponding to at least two different physical characteristics of the gemstone, and for analyzing the electronic signals to provide data files containing information identifying said first and second physical characteristics of the gemstone;

data storage means operatively connected to said electronic data processor means for storing the information identifying the first and second physical

Art Unit: 2800

characteristics of the gemstone, and for analyzing the electronic signals to provide data files containing information identifying said first and second physical characteristics of the gemstone;

data storage means operatively connected to said electronic data processor means for storing the information identifying the first and second physical characteristics in a database of gemstone identifying information for a plurality of known gemstones; and

means for comparing the identifying information of the viewed gemstone provided by said electronic data processor with the identifying information of a known gemstone retrieved from said data storage device so that the gemstone viewed by the

electronic camera means can be accurately identified from said database of gemstone identifying information.

43.(Previously presented) A system as set forth in Claim 42 comprising wherein the electronic data processor means comprises light control means for controlling the first and second illumination sources to illuminate the gemstone with one or both of the first and second illumination sources.

44.(Previously presented) A system as set forth in Claim 43 further comprising means for displacing the gemstone relative to said electronic camera means and wherein the electronic data processor means comprises means for controlling said electronic camera and said displacing means for capturing a profile image and a color image of the gemstone viewed by said electronic camera means.

45.(Previously presented) A system as set forth in Claim 44 comprising means for capturing multiple profile and color images of the gemstone by said electronic camera means.

46.(Previously presented) A system as set forth in Claim 43 further comprising means for capturing a fluorescence image of the gemstone with said electronic camera means.

47.(Previously presented) A system as set forth in Claim 43 further comprising means for displacing the gemstone relative to said electronic camera means and wherein the electronic data processor means comprises means for controlling said electronic camera means and said displacing means for capturing a brilliance and scintillation image of the gemstone with said electronic camera means.

48.(Previously presented) A system as set forth in Claim 47 further comprising means for capturing a girdle image of the gemstone with said electronic camera means.

49.(Previously presented) A system as set forth in Claim 47 further comprising means for capturing a table and luster image with said electronic camera means.

50.(Previously presented) A system as set forth in Claim 43 further comprising means for capturing a laser scatter image of the gemstone with said electronic camera means.

51.(Previously presented) A system as set forth in Claim 47 further comprising means for capturing a culet image of the gemstone with said electronic camera means.

52.(Previously presented) A system as set forth in Claim 47 further comprising means for capturing a table facet image of the gemstone with said electronic camera means.

53.(Previously presented) A system as set forth in Claim 47 **further comprising means for capturing a surface feature image of the gemstone with said electronic camera means.**

Application/Control Number: 09/701,195  
Art Unit: 2800

Page 2

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